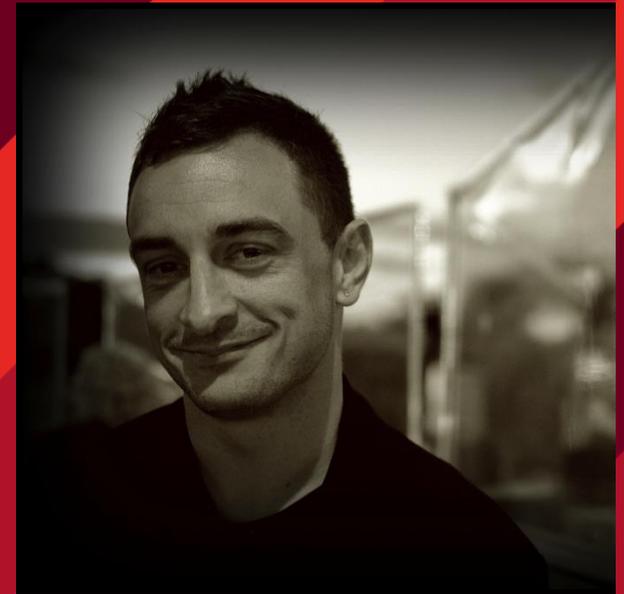


# Exploring the nexus of energy use, ageing, and health and wellbeing among older Australians

PROFESSOR ROSS GORDON

Energy Consumers Australia, Sydney, Friday 13<sup>th</sup> September  
2019



# Exploring the nexus of energy use, ageing, and health and well-being among older Australians



Project funded by an Energy Consumers Australia Research Grant



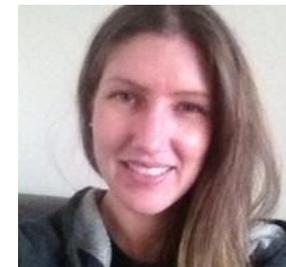
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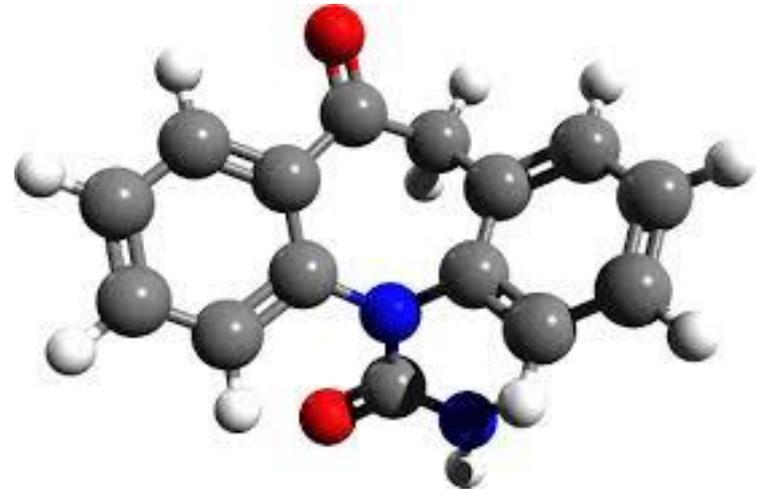
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# Structure

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1. Energy, Ageing, Health and Well-being?
2. Practice theory & the nexus of practices
3. Research Method
4. Findings
5. Implications
6. Q&A?



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Energy efficiency is an important topic in a context of climate change, rising energy prices, fuel poverty, and energy security.



Promoting household energy efficiency is a key intervention for tackling climate change (UNEP 2014).

However, energy use is a complex phenomenon concomitant with practices of everyday life: subsistence, care, comfort, convenience – and all the things that make home.

Simply telling people to do the right or wrong thing to do regarding energy consumption is not always the best approach (Gordon et al 2018).

Energy researchers are now paying attention to how the nexus of everyday practices are shaped by, and shape energy use (Shove and Walker 2014).

# Energy, Ageing, Health & Well-being

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Increasing attention from researchers, policymakers and stakeholders on the nexus between energy, health and well-being.

Energy is a resource for maintaining health, making home, living comfortably, caring for the self and others, and tending to the sick and dying (WHO 2005; Waitt et al 2016)

These issues are a particular concern given our ageing population and focus on ageing in place (AIHW 2017).

Our ageing population and increasing life expectancy is also synchronous with a rise in chronic disease.

As older people are encouraged to ‘manage’ their health & wellbeing as they age – energy use can play an important role.



# Energy, Ageing, Health & Well-being

High energy costs and concerns about energy efficiency can lead to worrying economic, social and health outcomes for older people (Hitchings and Day 2011).

- Restrict expenditure on essential food and clothing
- Physical discomfort
- Reduced physical and mental well-being
- Loneliness and social isolation
- Strained household relationships
- Distress about the care, comfort and social and emotional wellbeing of householders (Chester, 2013).



“I know a friend who used to use the street lights at night through the window instead of turning lights on. He had a fall in the bathroom and ended up in hospital”

High energy prices also create billing anxiety and associated thrifty practices that can be harmful (Waite et al 2016).

“In the winter when it’s cold I just go to bed early at 7 o’clock and try to keep warm under the blankets”

# Energy, Ageing, Health & Well-being

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But energy is also used to perform practices that support our health and well-being: cooking, keeping comfortable, leisure activities, and social interaction.

Yet, the links between domestic energy use, health and well-being, and ageing are not well understood.

Our project address this to explore the following research questions:

RQ1: What are the associations between domestic energy use, health, and well-being among older Australians?

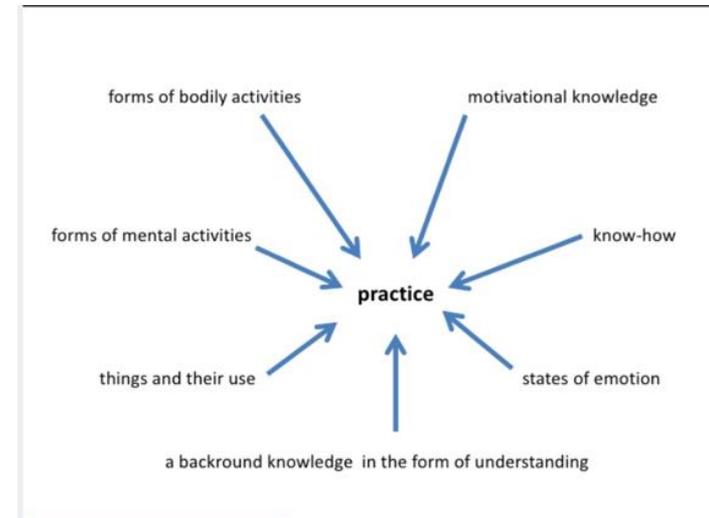
RQ2: How are the domestic energy use practices of older Australians configured by their understanding and experiences of ageing, (ill)health and well-being.

RQ3: How do older Australians negotiate the energy use challenges to manage their health and well-being?



# Practice theory & the nexus of practices

- Our research drew upon ideas from Social Practice Theory.
- Social practices refer to everyday or regular practices or habits such as using energy in the home and the way that these are typically and habitually performed (Schatzki 2002).
- Reckwitz (2002) states that practice comprises different elements:
  - bodily and mental activities
  - use of materials/things
  - Knowledge
  - Language
  - Structures
  - Spaces and places
  - human agency



These are utilised to routinely perform the practice.

# Practice theory & the nexus of practices

- In social practice theory – the concept of practices is the key unit of analysis. The primary focus is on the practices themselves.
- Practices link to form wider complexes and constellations - a nexus of practices (Hui et al 2017).
- Here we focus on the nexus of practices of home energy use, health, well-being & ageing; AND the various elements including language, discourse, bodies, materials, spaces & places, and everyday practicalities.



# Practice theory & the nexus of practices



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Hui et al (2017) draw attention to five forces that can shape a nexus of practices.

1. Suffusion: by certain phenomena like affect, ideology, general understandings, socio-materiality.
2. Threading through: certain things such as an object or a specific practice can thread through the nexus of practices, thereby linking them.
3. Largeness: All sorts of practices connect, forming complexes from small to large.
4. Changing connections: Practice nexus is continually happening and changing in small, and occasionally larger ways over time, space, jurisdiction, and materiality.
5. Practitioners: People are participants who perpetuate and transform practices through their actions.

# Research Method



Study 1: Baseline survey of 1583 older Australians (+60 years old) in 2018.

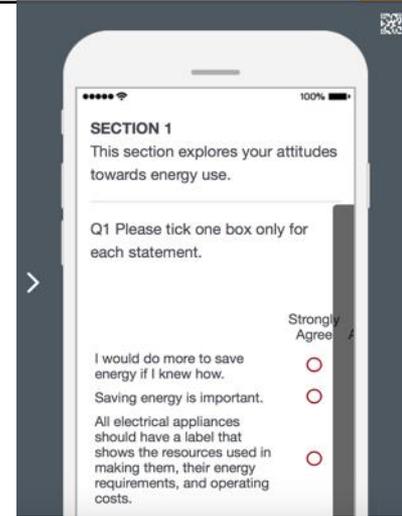
Aim to test for relationships between energy use and health & wellbeing outcomes; AND relationships between health and wellbeing status and energy use outcomes.

Aimed also to identify other factors that may influence these relationships.

Study 3: A follow up survey with 790 of the same cohort was then conducted in 2019 to test casual associations.

Online sample recruited from a consumer panel provider.

Sample collected using quotas to closely represent the Australian population.



# Research Method

Survey measured:

Attitudes

Thermal comfort

Energy use

Damp, condensation, & mould

Health: SF-36

Well-being

Stress

Anxiety

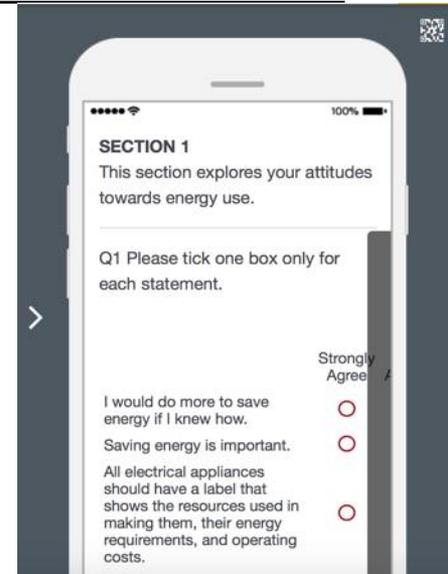
Affect

Capabilities

Health conditions

Health devices

Demographics (age, gender, location, income, education, ethnicity)



# Research Method

Study 2: Ethnographies with 39 older Australians in regional, NSW, Australia.

Recruited using a purposive, snowball sampling approach.

Participants ranged in age from 60 to 97 years old.

Majority Anglo-Australian ancestry, with 3 Dutch, 1 Italian.

The majority lived owned their home, with 2 renting/government housing.

Mix of living arrangements: Several living alone/some with spouse/a few with children.

All but one had health issues – these varied immensely and were often comorbid.

Included arthritis, asthma, diabetes, hip or knee replacements, sleep apnoea, hypertension, COPD, heart disease, Parkinson's, blindness, and emphysema.



# Research Method

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The first step was a narrative interview where participants were asked to talk about energy use, health, and how these relate.



Topics covered in the 1<sup>st</sup> interview included:

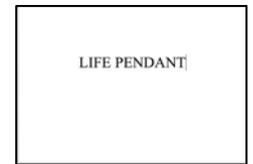
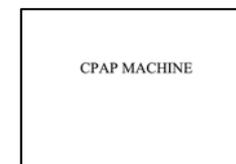
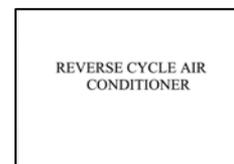
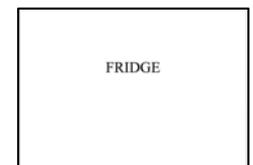
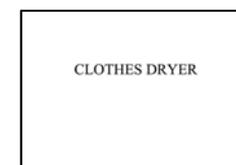
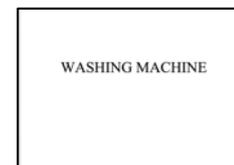
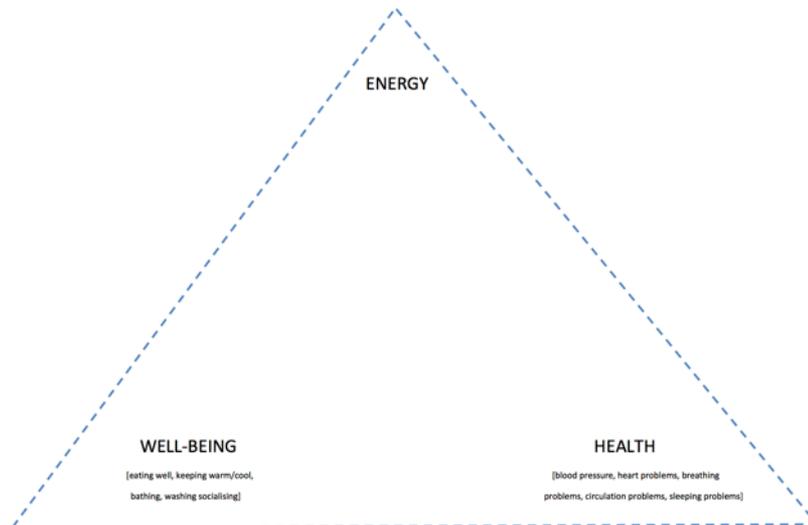
- Background of the participants and their homes
- Perceived links between energy, health and well-being, & ageing
- How energy is consumed in the home for health & well-being
- Current energy use practices
- Knowledge about energy consumption
- Ideas on how to support people to manage energy, health and well-being as they age

# Research Method

The second step involved re-visiting participants in their homes for a video ethnography.

Participants played a card game mapping how various appliances relate to health, well-being, and energy use.

They were then asked to demonstrate examples of energy use practices that relate to health and well-being (e.g. using a heater, a health device, or an appliance for leisure).



# Findings

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Cross-lagged panel model analysis of the baseline plus follow-up survey data identified a mixture of causal associations in one direction, and bi-directional causal associations.



In some instances, health and well-being variables were causally associated with energy use variables.

In other instances, energy use variables were causally associated with health and well-being variables.

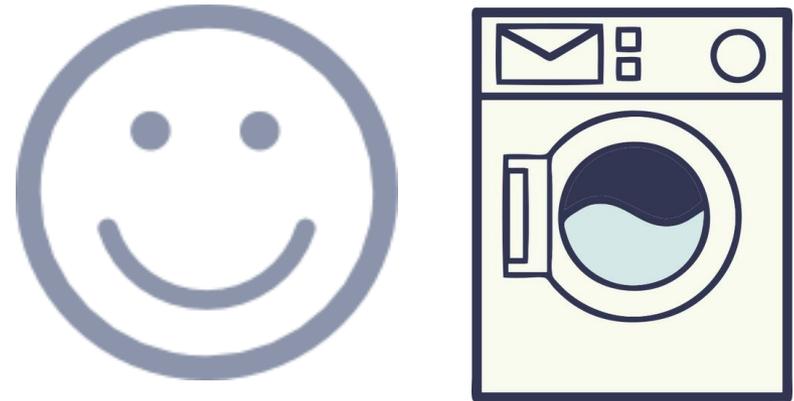
Importantly, a number of bi-directional relationships were also identified.

This provides evidence of the complex and two-way relationship between energy use and health and well-being.

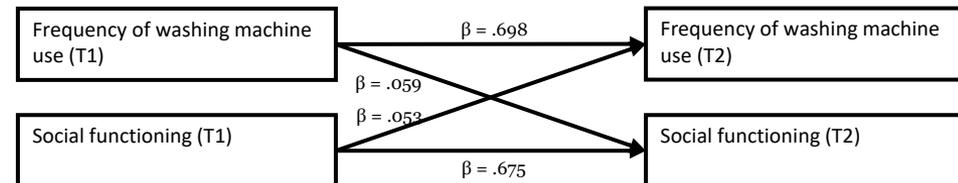
# Findings

## Relationships between frequency of use of energy appliances and health & well-being

Higher levels of general health and greater experience of positive feelings was associated with greater frequency of washing machine use.



Increased frequency of washing machine use was associated with increased social functioning, and in turn increased social functioning was associated with increased washing machine use.

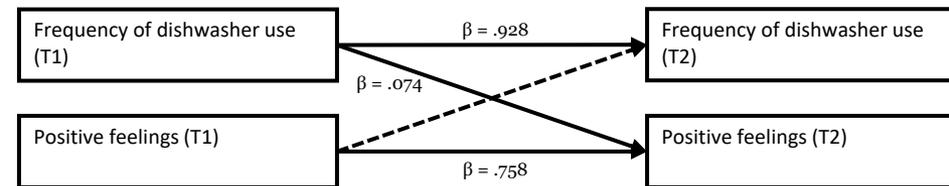


# Findings

Greater levels of role limitations owing to emotional problems was associated with greater frequency of clothes dryer use.



Greater frequency of dishwasher use was associated with higher levels of social functioning and experience of positive feelings.



There was also a bi-directional relationship between the frequency of dishwasher use and role limitations owing to emotional problems.

Greater frequency of dishwasher use was associated with greater role limitations owing to emotional problems and vice versa.

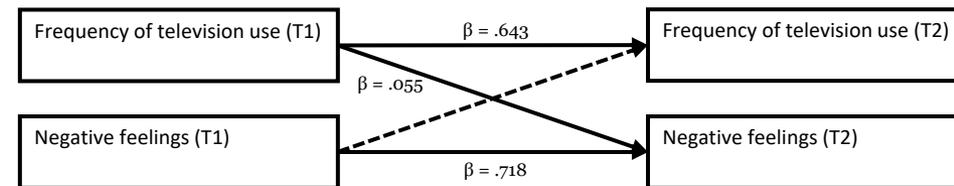


# Findings

Higher levels of emotional well-being but lower levels of negative feelings were associated with greater frequency of computer use.



Frequency of television use was associated with lower levels of both general health and social functioning, and with higher levels of negative feelings.



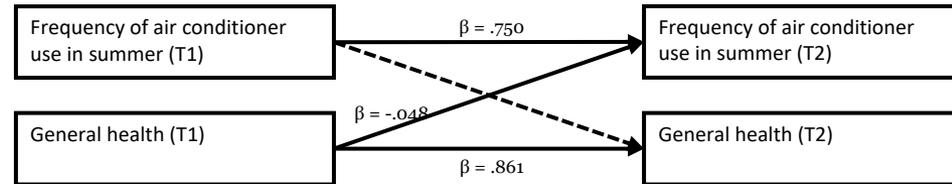
There was also a bi-directional relationship between the frequency of television use and emotional well-being.

Greater frequency of television use was associated with lower levels of emotional well-being, but higher levels of emotional well-being was associated with greater frequency of television use.



# Findings

Higher levels of general health were associated with less frequent use of air conditioning during the summer



Greater frequency of using air conditioning during summer was associated with less role limitations due to physical problems and lower levels of pain, but also less energy.



Greater frequency of fan use during summer was associated with less role limitations owing to physical and emotional problems.



In contrast, higher levels of physical functioning was associated with less frequent fan use during summer.

# Findings

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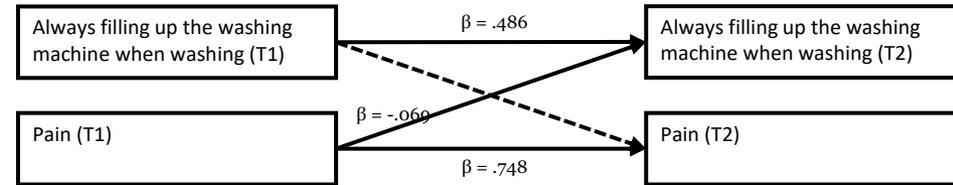
Frequency of using reverse cycle air conditioner in winter was shown to have a bi-directional relationship with physical functioning.

Greater frequency of using reverse cycle air conditioning in winter was associated with lower levels of physical functioning, but higher levels of physical functioning was associated with less frequent use the reverse cycle air conditioner in winter.



## Relationships between energy conservation behaviours & health & well-being

Higher levels of pain were associated with lower levels of always filling up the washing machine.

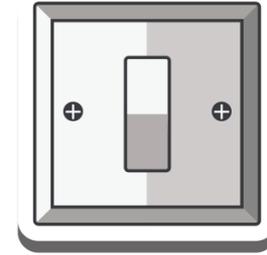


Higher levels of pain were associated with higher levels of tumble drying of clothes.

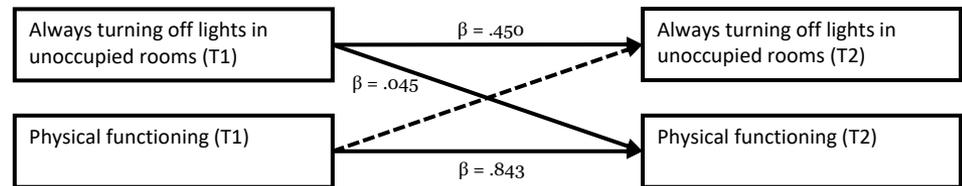


# Findings

Higher levels of pain were associated with lower levels of turning off the lights in rooms that were not occupied.



Higher levels of turning off the lights in rooms that were not occupied was associated with higher levels of physical functioning.



Higher levels of role limitations owing to emotional problems, as well as higher levels of stress, was associated with leaving electrical appliances in standby mode



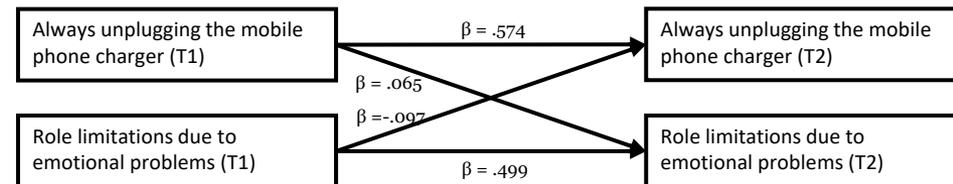
In contrast, higher levels of never leaving electrical appliances at home in standby mode was associated with higher levels of energy and emotional well-being.

# Findings

Always unplugging the mobile charger was associated with high levels of emotional well-being.

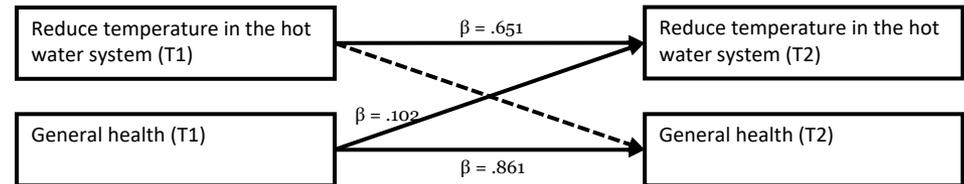
A bi-directional relationship between always unplugging the mobile charger when it's not in use and role limitations due to emotional problems was also identified

Higher levels of trying to buy energy efficient household appliances was associated with higher levels of physical functioning.

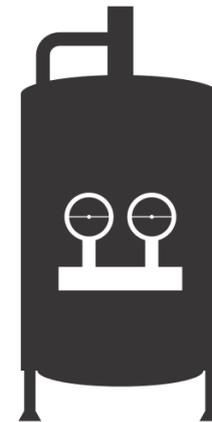


# Findings

Higher levels of general health, energy, and positive feelings were associated with increased likelihood of reducing temperature in hot water system.



Higher levels of stress were associated with a lower likelihood that participants reduced the temperature in their hot water system



# Findings

## What is energy for?

You need electricity. I can't see, with the weather, the way things are, how you'd survive without it. Nice tempered water, the luxuries and things like that, at this time of life, I need them. But my husband was an electrical contractor. He was extremely frugal with electricity. Not to waste, not to do this, not to do something else. Lori, 81, Figtree

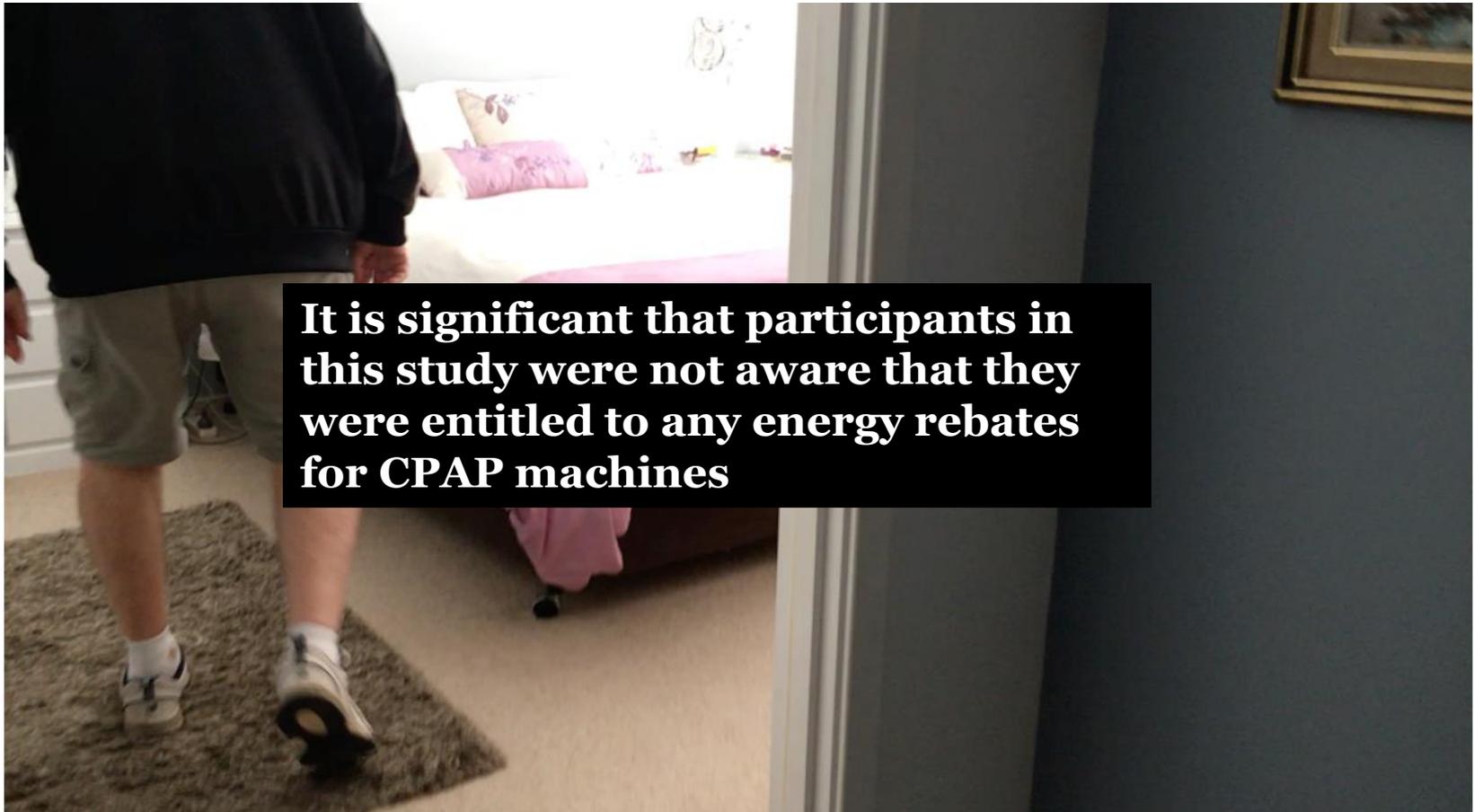
Basic comfort and sustenance really. Comfort and living. We have people in this country who are living in third world conditions. James, 71, Balgownie

I think with the heating and electricity usage in age, you've got to be comfortable...if you haven't got the finances to run your electricity or do what you want to do it's a miserable, miserable life...you can only put so many clothes on if...can't put the heating on, and if you can't afford to cook your meal on whatever facilities you've got. I think a lot of people are more infirm and then probably feel the cold and/or the heat, to face them. Caitlyn, 71 Balgownie

# Findings

## Using energy for essential medical devices

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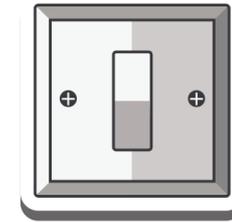


Bobby, 72, Wonoona

# Findings

## Preparing for increasing energy needs and costs

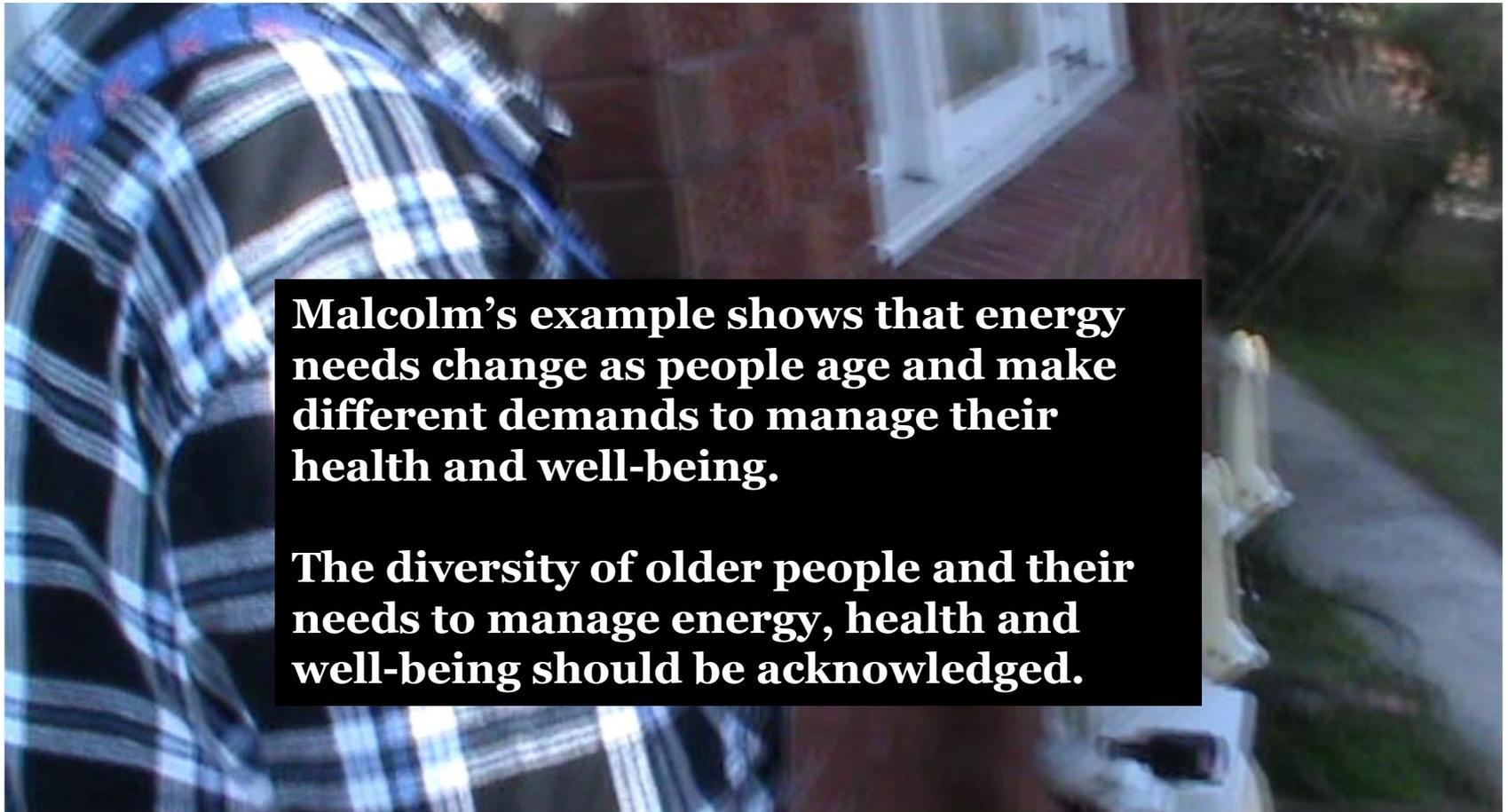
Well, we always have to try. We're both on low income. Gotta be careful like I'm careful. You just turn the lights off, and you don't let things run too long. Genevieve, 89, West Wollongong



My wife was ill for the last few years of her life, and I had to keep the air conditioning all day long. As soon as I got up in the morning at 7:00 I'd switch on the air conditioning. She'd come through and sit here and we had a table there and I put the radio on for her and then I'd go and make the breakfast. And the air conditioning would stay on all day until we went to bed about 10 or 10:30 at night. Carl, 97, Belambi



# Findings



Malcolm, 83, West Wollongong

# Findings

## Thermal comfort practices

It's horrible to be sick, with a mental illness or a physical illness, and be in a cold, cold place...the place is not welcoming...I don't want to invite friends here, because it's not a cozy, welcoming place...Well, I guess the thing is, I can sit here with a blanket and a hot water bottle. I couldn't expect guests to do that, and I wouldn't do it in front of guests. And so, if I want to spend time with people, we go out.

(Georgie, female, single, aged 72).



It's really quite cold in here in the winter. In the morning ... I get up really early. I'm up by 5:00 in the morning, and it's cold. And I just for the last couple of weeks, when it's been very cold, I've been putting that heater on first thing in the morning. But I turn it off quite early, and I have a blanket over, around myself. And I have a hot water bottle on, for my feet.  
(Georgie, female, single, aged 72).

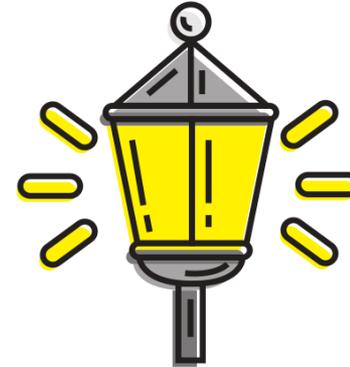
At times I have put it (reverse cycle air conditioning) on. I put it on yesterday afternoon because I knew the daughter was coming. But at times I just got a couple of throw rugs and just sit here and watch the television with that on.  
(Zack, male, widower, aged 89).

# Findings

## Negotiating health and safety with energy costs

If you have it [the home] lit up especially on the outside, there's less chance of you falling over and doing damage that way, and what we have got, what we had put in when we first got it, we got two way switches, so if you're going from one end to the other, you can always have your lights on and make sure you don't trip over and fall that way, yeah.

(Billy, male, married, aged 74).



I've stopped using the outside line because I felt awkward. I'd have to put my stick down and lift things up, then I'd go wobbly. I fell a couple of times, so...I have a dryer for emergencies, but I try not to use it because of the electricity costs.... It dries in the kitchen anyway.

(Carl, male, widower, aged 97).



# Findings

## Using energy to facilitate social life

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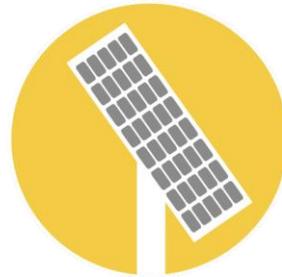
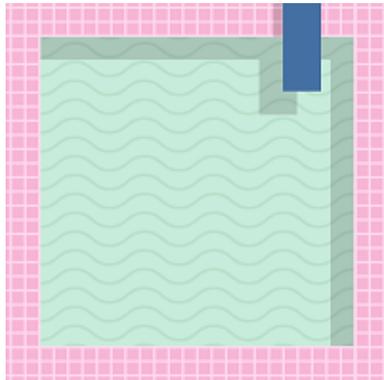
We got two mobile phones, a laptop, and Netflix. We use the data to keep in touch with people. Because the grandkids, they're away at the moment, they're in America. He went over there to play baseball, he's 12 year old. I was talking to him the other day and he's battered and bruised because the catcher actually controls the game. Ken, 74, Figtree



I enrolled at uni, doing creative writing and philosophy. If I don't do this, I will just become a little old lady watching television in the day. And...waiting to die. Yeah, I do all my reading on it. I write everything. I submit through Moodle. I'd be lost without my laptop. And then, I've got my iPad. Audrey, 72, Towradgi

# Findings

## Energy use to support good health & well-being



I was forced into it by cooking. Doing a bit of cooking for myself. I experiment a lot. I enjoy it. Yeah, you get some good results, you know. If I buy a piece of pork belly. If you get the crackling right! That's where the computer was handy looking up recipes. Especially the first time with the pork belly, it came out real crispy you know... Ron, 90, Corrimal

The air conditioning and what is the pool always takes it up (energy) because your pool's on an extra hour or two hours a day. Plus the solar heaters on. We've got solar heating for the pool. So, it's a heated pool. We've had hip and knee replacements and the pool's good for exercising and keeping everything moving. Daryl, 72, Wonoona



# Findings

## Energy use to support good health & well-being

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Josh, 75, Albion Park

# Findings



## Reflections on energy futures...

Well I really do think energy prices should be down to keep people comfortable and healthy. And that should be something they can go on because they can put food up, you can get a choice about two lots of butter or whatever. You can put food up, but energy is something everybody needs. I don't think it should be something you can't have just because you're not rich or you haven't got the money. Or you're on your own, single in a little flat somewhere. That's not fair ! Bobby, 72, Wonoona

Well the government used to run them. They were doing all right. it was virtually unlimited supply of electricity at a reasonable cost. Billy, 74, Figtree

Price and reliability of supply. And into the future the reliability of supply also focuses around the cost of that energy. If the energy is going to fluctuate, well to me that's not reliable supply. That's supply at a...with a rider on it. Put it back in the hands of governments where they can regulate it not in private enterprises. They're just making out the profit. Caitlyn, 71, Balgownie

# Findings



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Suffusion: Thrift, Care, Comfort, The Energy Market, Energy as a Basic Human Need.

Threading through: House as a home, Health devices, Leisure Appliances  
Keeping healthy and active, studying, caring for self, others & pets.

Largeness: Multiple practices of health, wellbeing, caring, making home, socialising - connect & form a complex that in turn connects to larger phenomena such as the Australian energy market.

Changing connections: The nexus shifts as our participants age, partners become sick or die, they move home or alter their living spaces, acquire and dispose of appliances, and experience changing governmental and energy supply jurisdictions.

Practitioners: Our participants embody intersections of numerous practices – cooking, eating, washing, socialising, travelling, physical activity that drive the nexus of practices of energy use, health, well-being and making home.

# Implications



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Our survey research found clear casual associations between energy use and health and well-being that seem to operate in both directions.

Our ethnography illustrated that energy, health & well-being form a nexus of practices that also connect to practices of cooking, caring, leisure, socialisation, and making home.

Various elements are deployed: appliances, rooms, bodies, ideas, language.

The idea that energy is a basic human need that sustains health, well-being, everyday life, and making home emerged.

Health issues make demands on energy use as people age.

But energy also enables people to achieve – comfort, leisure, socialisation – mental health and well-being.

# Implications



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Ideas of thrift, care, and comfort; and common understandings of energy costs and the market suffuse the nexus of practices.

And our participants demonstrate that older Australians are very knowledgeable, resourceful, and creative.

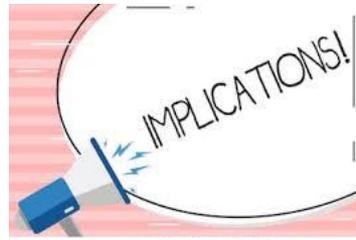
Energy policy and programmes should acknowledge the complex nexus that helps explain what energy is for.

Need for holistic approach working across energy, health, housing & social services.

Stronger promotion and uptake of existing rebates and concessions – opt-out rather than opt-in?

Additional concessions for those who have to use energy appliances or medical devices to manage their health.

# Implications



Tailored support that acknowledges the diversity in older Australians lives, energy use and health and well-being practices, and demands as they age.

Is the Australian energy market working to support health & well-being as people age?

Many participants called for a renationalisation of energy supply, and recognition that energy is a basic human need.

## Return to public ownership of national electricity grid would reduce costs, says economist

AM | By Will Ockenden

Updated 3 Mar 2017, 12:21pm

**A publicly owned electricity grid is the only way to put a cap on costs, keep energy competitive and solve the country's energy crisis, according to an economics expert.**

Professor John Quiggin says the creation of the National Electricity Market has been a failure, and governments should start buying back electricity transmission networks.

He argues without the need to generate private rates of return, public ownership of the electricity grid would rush costs down leading to lower



March 6, 2017 3:42pm AEDT

Australia's electricity grid is no longer fit for purpose. [Twitter](#) [Facebook](#) [CC BY-SA](#)

# Questions?

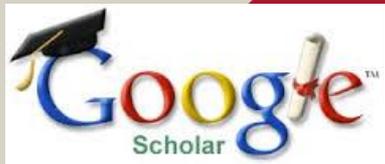
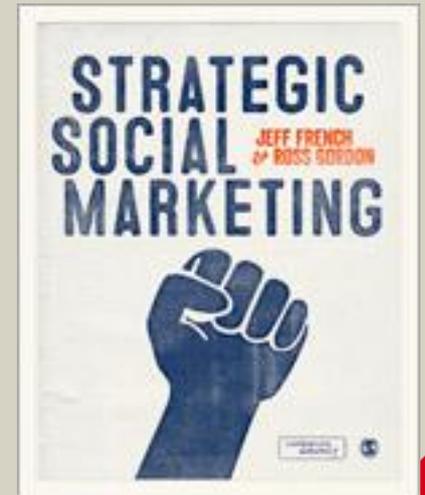


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